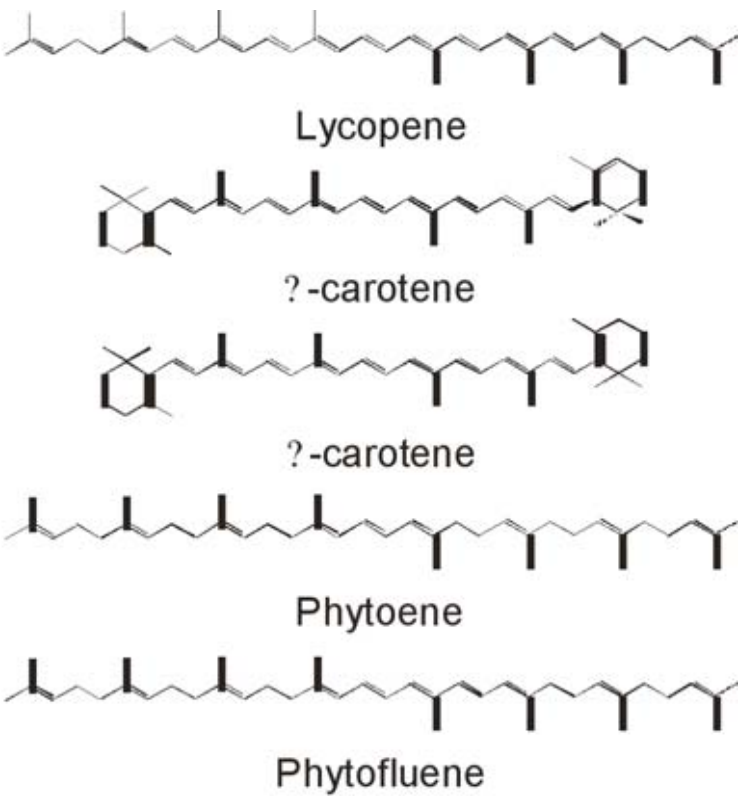
# Carotenoids in Human Retina

- Macula: retinal area of highest visual acuity.
- High concentrations of xanthophyll carotenoids lutein and zeaxanthin (yellow coloration) exist in the primate macula.
- Zeaxanthin is concentrated centrally; lutein predominates in more peripheral areas.
- Role of carotenoids: optical filtering; antioxidants (protection of macula from light-induced damage).
- Individuals with high dietary intakes and blood levels of lutein and zeaxanthin have a lower rate of visual loss from age-related macular degeneration (AMD), the leading cause of blindness in the elderly.

# Carotenoid Molecules


- $C_{40}H_{56}$ compounds
- Uptake through diet (fruits and vegetables)
- Long polyene backbone
- Alternating carbon single and double bonds with π-electron conjugation

P–0513
Nov 02